

#### ABSTRACT OF THE DISCLOSURE

A data modulation method and a data modulation device and a communication device are disclosed. The present invention relates to the synchronization and training preamble. The reference symbol optimized in order to contain the structure of "IA-A-IA-A-A-IA-A-IA-IA" is allocated to sub-carriers of the OFDM symbol. More specifically, by designing the structure of the preamble of the time domain, distinction from the other communication system can be certainly conducted holding the correctness of the clock synchronization. Also, we have adopted the series having low peak average ratio and dynamic range of sync symbol using the OFDM. Since the generation and the detection processings can be conducted in utilizing the generation device and the detection device of the sync preamble used in the convention system, this system has an advantage in increasing the common use of the LSI chip. We have made the sync series divided into 2 parts A and B before to one B region and made this to have simple construction.